epiTRENDS

A Bimonthly Bulletin on Epidemiology & Public Health Practice in Washington State

Vol. 8 No. 5

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Aggressive Public Health Initiatives Aimed at TB Outbreak Among King County's Homeless

A recent dramatic increase in tuberculosis (TB) among homeless persons in King County has prompted aggressive public health measures to control the outbreak. Cases increased by approximately 140% from 12 in 2001 to 29 in 2002. With 28 cases reported as of August 31, 2003, the outbreak remains a serious concern.

In 2002, Public Health – Seattle & King County developed a plan to address the outbreak with the assistance of the Centers for Disease Control & Prevention (CDC) and the Washington State TB Control Program. The primary objective is to identify active cases of TB among homeless persons residing in King County. This group comprises those with an extensive history of homelessness and those who are homeless at the time of diagnosis. Most or all of these persons spend time in similar places such as shelters, food programs, sobering centers, day centers, certain bars, public parks, and other public locations.

The plan involves screening homeless persons at shelters, homeless day programs, at the county TB clinic in Seattle, local jails, Harborview Medical Center Emergency Room, and other community clinics. This five-part screening for suspected cases and named and site contacts includes: history and symptom check, tuberculin skin test (TS), sputum collection, chest X-ray, and HIV test.

Surveillance Findings

Among the 57 cases of TB identified among homeless persons since January 2002, most were U.S. born (88%) and male (81%), and 51% were aged 25 to 44 years. Table 1 gives the case percentages by ethnicity and type of infection. More than half of the outbreak cases were considered

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Unintentional Poisoning Death Rate Rises Alarmingly

The unintentional poisoning death rate in Washington State increased by an alarming 141% between 1990 and 1998 (Figure 1); the average annual rate increase over that period was 10%. The newly released 2002 unintentional poisoning death rate was 8 per 100,000, a 28% increase from 2001. The state increase in the death rate over the last decade mirrors a national trend. In 2001, about 66% of the 578 poisoning deaths in Washington State were unintentional.

The Department of Health (Injury Prevention Program and Center for Health Statistics) studied unintentional poisoning deaths to define high-risk populations and examine substances involved. We considered poisoning to be the damaging physiologic effects of ingestion, inhalation, or other exposure to a broad range of chemicals, including pesticides, heavy metals, gases/vapors, drugs, and a variety of common household substances, such as bleach and ammonia.

We used the Washington State death certificate and 2000 census population data to calculate sex- and age-specific unintentional poisoning death rates since 1990. The sex- and age-specific analysis does not include 2002 data because it just became available. However, beginning on January 1, 1999 a change occurred in the way in which deaths were classified from the International Classification of Diseases

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Poisoning Deaths *(from page 1)*

(ICD) version 9 to version 10. Consequently, it is impossible to know if the increase in the unintentional poisoning death rates between 1998 and 1999 are due to a true increase or reflect changes in the classification. The Centers for Disease Control and Prevention has not yet calculated ICD comparability ratios for versions 9 and 10 for injury-related deaths.

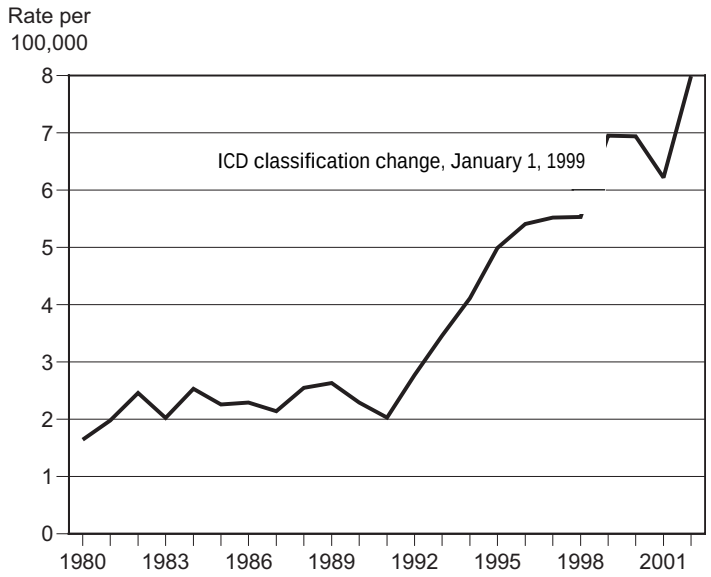
Persons 35–44 years old had the highest rate of unintentional poisoning deaths each year from 1990 to 2001, and those 45–54 years old had the largest increase in deaths due to unintentional poisoning deaths from 1990 to 1998. These patterns continued from 1999 to 2001. Poisoning is now the leading cause of injury-related death in these age groups.

Males had higher unintentional poisoning death rates than did females. The rate among males increased by 187% from 1990 to 1998, with the largest increase among those 45–54 years old. Among females the death rate increased by 74% from 1990 to 1998, with the largest increase among those 35–44 years old. These patterns continued from 1999 to 2001. The percentage of unintentional poisoning deaths that were drug related fluctuated by year, and ranged from about 85% in 1991 to 97% in 1999.

For More Information

For more information on the study of poisoning deaths, contact: Jennifer Sabel, Injury Prevention Program, 360-236-3756 or Jennifer.sabel@doh.wa.gov. For national information about poisoning see: http://www.cdc.gov/ncipc/factsheets/poisoning.htm.

FIGURE 1: Unintentional poisoning deaths, 1999–2001



The death certificate lists only one substance as the cause of death; however, many drug-related deaths (from either prescription or illicit drugs) involve more than one drug. Thus, we reviewed the recent multiple cause-of-death files from 1999 to 2001 to enumerate the specific substances or classification of poisoning agents involved. The multiple cause-of-death files showed that cocaine, opioids, alcohol, and other narcotics were the most commonly listed substances among unintentional poisoning deaths.

Findings from the multiple cause-of-death files suggest that greater focus be directed to not only the use of illicit drugs, such as cocaine, that have traditionally resulted in deaths from unintentional overdoses, but on the misuse of prescription drugs, particularly opioids prescribed for pain management. More information is also needed to understand how drugs are obtained, the contribution of each drug to the death, the circumstances of their use, and factors that contribute to increased usage. This effort will require collaboration with substance abuse and mental health workers, law enforcement officials, medical examiners, physicians, and pharmacists. ◆

2002 Surveillance Data Show Rise in Pertussis, Decline in Hepatitis

The state's Annual Communicable Disease Report for 2002 will be available in October. Summary tables will be on-line at: www.doh.wa.gov/Notify/list.htm. For a complete report, call DOH at 206-361-2914.

Pertussis was the most commonly reportable vaccine-preventable condition, with 575 cases in Washington during 2002, a threefold increase from 2001. Eight of 16 outbreaks occurred in health care settings.

Acute hepatitis cases continue to decline from a high of 3,273 hepatitis A cases in 1989 to only 162 cases in 2002. There were 83 acute hepatitis B and 27 hepatitis C cases, both decreases from recent years.

Travel-associated infections diagnosed in Washington residents during 2002 included one case of cholera, 26 cases of malaria, and a fatal case of dengue fever. Unusual zoonotic conditions included one case of hantavirus pulmonary syndrome, three cases of tularemia, one case of babesiosis, one case of Rocky Mountain spotted fever, and seven cases of relapsing fever.

Annual Surveillance Data by County, 2002

Washington State Department of Health

County	E. coli O157:H7	Salmonella	Shigella	Campylobacter	Hepatitis A	Hepatitis B	Non-A, Non-B Hepatitis	Meningococcal Disease	Pertussis	Tuberculosis	Chlamydia	Gonorrhea	Syphilis	AIDS
Adams	0	1	0	1	0	0	1	0	1	0	22	0	0	2
Asotin	0	0	1	1	0	0	0	1	0	0	42	1	0	1
Benton	3	13	5	19	1	0	0	1	1	1	238	11	0	4
Chelan	0	10	0	10	1	0	0	2	8	1	129	3	0	1
Clallam	2	10	0	4	1	0	0	0	2	0	157	2	0	3
Clark	15	33	8	54	13	2	0	11	22	10	844	138	2	32
Columbia	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Cowlitz	1	7	1	11	2	11	0	0	26	2	128	13	0	2
Douglas	1	4	0	7	0	0	0	0	2	1	60	3	0	0
Ferry	0	0	0	0	0	0	0	0	0	0	10	0	0	1
Franklin	2	8	1	4	1	0	0	2	1	3	162	4	0	4
Garfield	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Grant	1	22	2	11	1	0	0	1	1	2	169	4	0	2
Grays Harbor	0	13	1	7	1	0	0	0	5	1	108	12	0	1
Island	0	4	0	3	4	0	0	1	2	0	223	15	4	2
Jefferson	1	2	0	3	0	0	0	0	0	0	32	2	0	1
King	32	211	84	295	30	30	8	21	153	158	4470	1462	50	275
Kitsap	5	18	2	11	5	0	0	0	5	6	532	81	2	11
Kittitas	3	5	0	3	2	0	0	1	0	0	74	2	0	1
Klickitat	0	1	0	2	0	0	0	0	0	1	26	2	0	1
Lewis	2	5	2	14	4	0	2	0	0	0	130	13	0	1
Lincoln	0	0	0	2	0	0	0	0	0	0	5	0	0	0
Mason	0	3	1	5	2	2	0	0	1	0	109	6	0	2
Okanogan	1	1	1	3	0	0	0	0	2	1	96	4	0	2
Pacific	0	1	4	2	0	0	2	2	1	0	39	0	0	3
Pend Oreille	1	0	0	1	0	0	0	0	0	0	9	0	0	0
Pierce	11	60	58	44	61	5	5	11	124	16	2733	636	5	29
San Juan	0	1	1	5	1	0	0	0	1	1	14	1	0	0
Skagit	0	13	1	25	3	3	1	6	70	3	229	17	1	0
Skamania	0	1	0	0	0	0	0	0	2	0	11	1	0	0
Snohomish	11	78	17	105	14	5	1	5	35	16	1295	190	4	32
Spokane	43	26	7	56	4	15	3	2	0	7	905	124	1	18
Stevens	0	4	0	7	0	0	0	0	0	0	33	2	0	2
Thurston	1	17	3	27	6	2	1	1	11	3	440	52	0	10
Wahkiakum	0	0	0	0	0	0	0	0	0	0	3	1	0	1
Walla Walla	3	10	0	140	0	0	0	0	0	3	115	3	0	2
Whatcom	15	16	2	46	2	7	0	1	13	7	367	53	0	8
Whitman	2	2	0	2	0	0	0	2	1	1	87	6	0	1
Yakima	10	55	28	102	3	1	3	5	85	8	886	61	1	3
Unknown														
2002	166	655	230	1032	162	83	27	76	575	252	14,936	2925	70	457
2001	150	681	236	991	184	171	31	71	184	261	13,631	2991	57	524

TB Outbreak *(from page 1)*

contagious. Of the 48 cases of pulmonary TB, 54% (26/48) had a positive sputum smear and 13% (6/48) had a cavitary X-ray. These tests are crude markers of the proportion of cases that are infectious.

Most (91%) of the infected homeless persons did not have a previous diagnosis of TB disease and most (72%) were HIV negative. Of those infected with HIV (n=10), six were American Indian/Alaskan Native and seven were men.

None of the 53 persons with TB infection who were tested for drug effectiveness showed resistance to any TB medications. Of the 57 cases, 56 persons started anti-TB medication and 14 have completed therapy. Of the remainder who started therapy, one died, one was lost to follow-up, and 40 were still taking medication at time of report. Maintaining a rigorous medication regimen for a migratory population has been difficult.

DNA fingerprinting to analyze the TB strains assisted in identifying the relationship between the outbreak cases. Seventeen (59%) of the 2002 outbreak cases were infected with the same strain; 15 cases in 2003 matched that initial outbreak strain, which pointed to a continuing relationship among the cases.

TABLE 1: Ethnicity and type of infection for homeless persons infected with TB, January 2002 to August 31, 2003 (N = 57)

Ethnicity	*Number of Cases (%)*
American Indian/Alaskan Native	21 (37)
Black, non-Hispanic	20 (35)
White, non-Hispanic	8 (14)
Hispanic	6 (11)
Asian/Pacific Islander	1 (2)
Type of Infection	*Number of Cases (%)*
Pulmonary	41 (72)
Extra-pulmonary only	9 (16)
Pulmonary and extra-pulmonary	7 (12)

Challenges in Contact Investigations

Identifying, screening, and initiating medical therapy for persons who come into closest contact with the outbreak cases is a focus of significant effort for Public Health – Seattle & King County. All contacts who can be located are evaluated using the five-part screening method. Finding and completing evaluations for all identified contacts has proved to be a challenge. According to attendance records at homeless programs, at least 30 contacts have not returned to various sites where they were initially identified. Attempts to contact these persons have included leaving letters at places they frequent, alerting staff at community programs and shelters, and conducting outreach and interviews on the street.

Despite these challenges, investigation and identification of contacts has been an effective tool for decreasing the spread of TB in this population, as many of the new cases were first identified as contacts to earlier cases. See the sidebar at left for sources of more information on this issue.

WWW Access Tips

Information on TB in King County is available at: http://www.metrokc.gov/health/tb

For More Information

For updated information on the status of the TB outbreak in King County, please contact Linda Lake, TB program manager for Public Health – Seattle & King County at: Linda.Lake@metrokc.gov or 206-731-4578.

*epi*TRENDS
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Olympia, WA 98504-7812

Washington State Department of Health

*epi*TRENDS is published bimonthly by the Washington State Department of Health.